APPENDIX J – IMPACT TABLES

GEOGRAPHICAL AND PHYSICAL

SOIL EROSION AND DUST

Alternative 1:	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Soil erosion and dust**
Nature of impact:	**Disturbance to soil which is caused during the construction of the box culvert and establishment of new road surface may lead to erosion of the site and surrounds.**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 1 (0-1 years)**
Consequence of impact or risk:	**Clearing and excavation activities can result in erosion and dust.**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**2-Resource may be partly destroyed (PR)**
Degree to which the impact can be reversed:	**Completely reversible (R)**
Indirect impacts:	**Disturbance to surface area can result in erosion and dust generation**
Cumulative impact prior to mitigation:	**Exposing soil may lead to erosion and dust generation if not mitigated.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**14 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**1-Completely mitigatable (CM)**
Proposed mitigation:	• **The riparian vegetation cover should be disturbed as little as possible during the construction of the drainage line crossing and may not be disturbed at all within the proposed no-go areas.** • **Access to roads and other areas must be controlled to avoid disturbance of areas outside the development footprint. Personnel should be restricted to the immediate construction areas only.** • **Monitor construction areas frequently for signs of erosion and if signs of erosion are detected implement repair and preventative measures immediately.** • **Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**7 - Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Not applicable to operational phase.**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.**

SURFACE AND GROUND WATER POLLUTION

Alternative 1:	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Impact of construction activities on surface and underground water pollution.**
Nature of impact:	**The site is an Ecological Support Area (watercourse). Construction could result in the pollution of surface water and eventually result in ground water pollution. Construction activities such as excavation and road surfacing and or diesel and oil spills could impact surface and ground water quality.**
Extent and duration of impact:	**Extent 3 (Within a 20 km radius of the centre of the site) & Duration 3 (5 – 15 years)**
Consequence of impact or risk:	**Degradation of ESA. Possible pollution of surface and ground water.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**2-Resource may be partly destroyed (PR)**
Degree to which the impact can be reversed:	**Partly reversible (PR)**
Indirect impacts:	**Pollution of water resources. Degradation of ESA.**
Cumulative impact prior to mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**64 - High**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**2-Partly mitigatable (PM)**
Proposed mitigation:	**Mitigation measures included in EMP, attached as Appendix H, shall be adhered to.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**56 – Medium**
OPERATIONAL PHASE	
Potential impact and risk:	**Not applicable to operational phase.**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.**

DISTURBANCE TO SUBSURFACE GEOLOGICAL LAYERS

Alternative 1:	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Disturbance to subsurface geological layers.**
Nature of impact:	**Construction and excavation activities will affect the underlying geological layers on site to some extent.**
Extent and duration of impact:	**Extent 2 & Duration 5**
Consequence of impact or risk:	**Excavation activities can disturb subsurface geological layers.**
Probability of occurrence:	**4**
Degree to which the impact may cause irreplaceable loss of resources:	**2-Resource may be partly destroyed (PR)**
Degree to which the impact can be reversed:	**0%**
Indirect impacts:	**Disturbance to surface area can result in erosion and dust generation**
Cumulative impact prior to mitigation:	**It is not anticipated that the impact will be high as the affected substrata is very shallow and the integrity of the underlying ground structures will thus not be sacrificed.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**36 – Medium**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**2**
Proposed mitigation:	**Due to the nature of the impacts, not much can be done to mitigate the impact, only the severity of it can be managed. Mitigation and management for affecting geology is to ensure that removal of soil is kept to a minimum – removal of soil should only be in areas where infrastructure will be established. Disturbance through the river must preferably be in summer and definitely not when the river flows. The pipe and culvert must be laid and constructed and the area compacted in one time and the area must be immediately filled, shaped, compacted and rehabilitated.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 – Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Not applicable to operational phase.**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Same as construction but decommissioning not foreseeable/highly unlikely – roads, river crossings and services for established residential community.**

ECOLOGICAL AND BIOLOGICAL

IMPACT ON SENSITIVE ENVIRONMENTS (RIVER)

Alternative 1:	**Biological Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Impact on sensitive environment specifically the river. Impact on riparian fauna and flora and potential introduction of alien invasive species. Loss of freshwater ecology habitat.**
Nature of impact:	**Disturbance of an ESA2 watercourse. Habitat destruction is the alteration of a natural habitat to the point that it is rendered unfit to support the species dependent upon it as their home territory. Many organisms previously using the area are displaced or destroyed, reducing biodiversity. Modification to habitats as a result of small-scale farming activities and roads with the total transformation of the non-perennial river downstream through Bonnievale town are the main causes of habitat destruction in this case. Additional causes of habitat destruction include overgrazing. The non-perennial riverine systems have very low flows as part of their annual hydrological cycles and are particularly susceptible to changes in habitat condition. The proposed development project has the potential to lead to habitat loss and/or alteration of the aquatic and riparian resources on the study area. It is however important to note that the freshwater ecology, and especially aquatic habitats of most of the systems has been seriously to critically impaired or impacted already as a result of existing infrastructure and as such the risk to the receiving environment as a result of the proposed project is reduced to some degree.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 5**
Consequence of impact or risk:	**Loss of riparian vegetation and bed/bank modification. Impact on fauna due to construction activities. Loss of freshwater ecology habitat.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**2-Resource may be partly destroyed (PR)**
Degree to which the impact can be reversed:	**Partly reversible (PR)**
Indirect impacts:	**Loss of habitat.**
Cumulative impact prior to mitigation:	**Riparian zone** **Earthworks in the vicinity of drainage systems leading to increased runoff and erosion and altered runoff patterns.** **Construction of the pipelines and culverts altering stream flow patterns and water velocities.** **Alien invasive vegetation encroachment.** **Erosion and incision of riparian zone.** **Instream zone** **Loss of aquatic refugia.** **Altered substrate conditions due to the deposition of silt** **Altered depth and flow regimes in the major drainage systems** **Alien vegetation proliferation**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**36 – Medium**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**2-Partly mitigatable (PM)**
Proposed mitigation:	**Essential mitigation measures:** **• Limit the footprint area of the construction activity to what is absolutely essential in order to minimise the loss of aquatic habitats in the area.** **• Keep all demarcated sensitive zones outside of the construction area off limits during the construction phase of the project;** **• On-going aquatic ecological monitoring must take place on a 6-monthly basis by a suitably qualified assessor.**

	Recommended mitigation measures **• Permit only essential construction personnel within 32m of all riparian systems;** **• Restrict construction activities to the drier summer months, if possible, to avoid sedimentation and siltation of riparian features in the vicinity of the proposed development and aim for completion in early spring at which time revegetation should take place allowing for a full summer growing season to become established.**
Residual impacts:	**Loss of significantly impacted upon habitat.**
Cumulative impact post mitigation:	**Possible impact on habitats.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 – Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Impact on sensitive environments (rivers)**
Nature of impact:	**Disturbance of an ESA2 watercourse should any operational activities described in the MMP be conducted – for example - removal of Sediment, Debris or Nuisance vegetation growth within the river.**
Extent and duration of impact:	**Extent 3 & Duration 3**
Consequence of impact or risk:	**Minor disturbance to riparian area and vegetation and bed/bank modification.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**2-Resource may be partly destroyed (PR)**
Degree to which the impact can be reversed:	**Partly reversible (PR)**
Indirect impacts:	**Loss of habitat.**
Cumulative impact prior to mitigation:	**Loss of habitat.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**48 – Medium**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**2-Partly mitigatable (PM)**
Proposed mitigation:	**Comply with mitigation measures as per MMP.**
Residual impacts:	**Loss of significantly impacted upon habitat.**
Cumulative impact post mitigation:	**Possible impact on habitats.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**10 – Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.**

DEGRADATION / LOSS OF NATURALLY OCCURRING / INDIGENOUS FLORA AND HABITATS

Alternative 1:	**Biological Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Degradation / loss of naturally occurring / indigenous flora and habitats.**
Nature of impact:	**Construction activities must be controlled to ensure that the river and adjacent vegetated areas are not negatively impacted.**
Extent and duration of impact:	**Extent 3 & Duration 2**
Consequence of impact or risk:	**Activities can disturb vegetation.**
Probability of occurrence:	**4**
Degree to which the impact may cause irreplaceable loss of resources:	**2-Resource may be partly destroyed (PR)**
Degree to which the impact can be reversed:	**70%**
Indirect impacts:	**Disturbance to surface area can result in erosion and dust generation**
Cumulative impact prior to mitigation:	**Loss of significantly impacted upon vegetation and habitat.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**36 – Medium**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**2**
Proposed mitigation:	**• Undertake construction activities only in identified and specifically demarcated areas.** **• Invasive vegetation to be removed during construction to be disposed of at landfill site in such a manner that seeds must not be able to spread from the disposal site or during transportation.** **• At no point may construction equipment stand unauthorised within or near the river.** **• All excess sediment removed from the watercourses must be utilised as part of the building activities or be removed from site. At no point may this material be dumped on site or within any of the other freshwater features identified within the surrounding area. Topsoil will have a high density of alien invasive seeds which will need to be controlled into the operational phase.** **• One culvert crossing are proposed over the river to gain access. Care must be taken when constructing the culverts to ensure that the design accommodates a 1 in 100 year flood event and that the base levels are maintained so that no erosion or ponding of water occurs surrounding the crossing.** **• Soil surrounding the wingwalls must be suitably backfilled and sloped (minimum of a 1:3 ratio) and concrete aprons as well as gabion mattresses should be installed both up and downstream for energy dissipation and sediment trapping.** **• All soils within the river surrounding the culvert must be loosened on completion of works to allow for revegetation.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**10 – Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Not applicable to operational phase.**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Same as construction but decommissioning not foreseeable/highly unlikely – roads, river crossings and services for established residential community.**

SOCIO-ECONOMIC

INCREASE IN JOBS

Alternative 1:	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Increased jobs**
Nature of impact:	**Temporary construction jobs will be created. The locals may not have sufficient skills to utilize the employment opportunities and "others (work force and job seekers)" may be employed from outside the community.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Influx of contract workers due to lack of skills.** **Influx of job seekers due to jobs created.** **Littering.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**NA – Positive**
Degree to which the impact can be reversed:	**NA – Positive**
Indirect impacts:	**NA – Positive**
Cumulative impact prior to mitigation:	**NA – Positive**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low (positive)**
Degree to which the impact can be avoided:	**NA – Positive**
Degree to which the impact can be managed:	**NA – Positive**
Degree to which the impact can be mitigated:	**NA – Positive**
Proposed mitigation:	**Local contractors, employing or seeking to employ local (historically disadvantaged individuals (HDIs) from the region who are suitably qualified, should get preference.** **The local community and local community organizations should be informed of the project and potential job opportunities.**
Residual impacts:	**NA – Positive**
Cumulative impact post mitigation:	**NA – Positive**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low (positive)**
OPERATIONAL PHASE	
Potential impact and risk:	**Not applicable to operational phase.**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.**

TRAFFIC IMPACTS

Alternative 1:	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Traffic Impacts**
Nature of impact:	**The construction machinery during the upgrade will have a traffic impact.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0-1 years)**
Consequence of impact or risk:	**Local residents may experience traffic delays.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**1-Resource will not be lost (R)**
Degree to which the impact can be reversed:	**Partly reversible (PR)**
Indirect impacts:	**The minor increase in travel times for a limited number of local residents, therefore cumulative impact is not significant.**
Cumulative impact prior to mitigation:	**The minor increase in travel times for a limited number of local residents, therefore cumulative impact is not significant.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 – Low**
Degree to which the impact can be avoided:	**Low**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**2-Partly mitigatable (PM)**
Proposed mitigation:	**Establish alternative route for local residents.**
Residual impacts:	**The minor increase in travel times for a limited number of local residents, therefore cumulative impact is not significant.**
Cumulative impact post mitigation:	**The minor increase in travel times for a limited number of local residents, therefore cumulative impact is not significant.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Traffic Impacts**
Nature of impact:	**Improved road surface and pedestrian access. Safer road travel.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 5 (Will not cease)**
Consequence of impact or risk:	**NA – Positive**
Probability of occurrence:	**5 – Definite**
Degree to which the impact may cause irreplaceable loss of resources:	**NA – Positive**
Degree to which the impact can be reversed:	**NA – Positive**
Indirect impacts:	**NA – Positive**
Cumulative impact prior to mitigation:	**NA – Positive**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
Degree to which the impact can be avoided:	**NA – Positive**
Degree to which the impact can be managed:	**NA – Positive**
Degree to which the impact can be mitigated:	**NA – Positive**
Proposed mitigation:	**NA – Positive**
Residual impacts:	**NA – Positive**
Cumulative impact post mitigation:	**NA – Positive**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.**

DAMAGE TO EXISTING INFRASTRUCTURE

Alternative 1:	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Damage to existing infrastructure.**
Nature of impact:	**Construction activities will impact upon existing sewer pipelines that may occur along the pipeline route as well as when connected to the existing sewer line.**
Extent and duration of impact:	**Extent 3 & Duration 1 (0-1 years)**
Consequence of impact or risk:	**Local residents may service interruption. Pollution.**
Probability of occurrence:	**4**
Degree to which the impact may cause irreplaceable loss of resources:	**1-Resource will not be lost (R)**
Degree to which the impact can be reversed:	**Partly reversible (PR)**
Indirect impacts:	**Impacts on adjacent rivers. Ground water pollution.**
Cumulative impact prior to mitigation:	**Damage or loss of existing infrastructure. Damage and loss of private property adjacent to the proposed activity. Spillage of sewerage into the natural environment.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**24 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**1**
Proposed mitigation:	**• Care should be taken when conducting construction activities in close proximity to infrastructure and private property; • Should any damage occur to existing infrastructure or private property as a result of construction activities; the relevant service provider / landowner must be contacted and the repair/replacement must be commissioned to the satisfaction of the service provider / landowner. Should spillage occur, the BGCMA and DEA&DP: Pollution and chemical management directorate must be informed immediately.**
Residual impacts:	**Impacts on adjacent rivers. Ground water pollution.**
Cumulative impact post mitigation:	**Damage or loss of existing infrastructure. Damage and loss of private property adjacent to the proposed activity. Spillage of sewerage into the natural environment.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**9 – Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Infrastructure failure.**
Nature of impact:	**Infrastructure failure will result in the spillage of raw sewerage into the receiving environment.**
Extent and duration of impact:	**Extent 3 & Duration 2**
Consequence of impact or risk:	**Local residents may service interruption. Pollution.**
Probability of occurrence:	**2**
Degree to which the impact may cause irreplaceable loss of resources:	**2**
Degree to which the impact can be reversed:	**Partly reversible (PR)**
Indirect impacts:	**Impacts on adjacent rivers. Ground water pollution. Pollution of the receiving environment as well as offensive odours from the spillage causing a nuisance to adjacent landowners / users.**
Cumulative impact prior to mitigation:	**Damage or loss of existing infrastructure. Damage and loss of private property adjacent to the proposed activity. Spillage of sewerage into the natural environment.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**18 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**2**
Proposed mitigation:	**• Regular inspection and maintenance of the sewer pipeline.**

	• Infrastructure failure reported or identified to be fixed as a priority. **• Spillage of raw sewerage to be mitigated and remediated where required.** **• Should any damage occur to existing infrastructure or private property as a result of construction activities; the relevant service provider / landowner must be contacted and the repair/replacement must be commissioned to the satisfaction of the service provider / landowner. Should spillage occur, the BGCMA and DEA&DP: Pollution and chemical management directorate must be informed immediately.**
Residual impacts:	**Impacts on adjacent rivers. Ground water pollution.**
Cumulative impact post mitigation:	**Damage or loss of existing infrastructure. Damage and loss of private property adjacent to the proposed activity. Spillage of sewerage into the natural environment.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**14 – Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.**

WASTE IMPACTS

Alternative 1:	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Waste Impacts**
Nature of impact:	**General construction waste will be generated during the construction phase. Poor waste management practices on site may lead to dumping and windblown litter creating a negative visual impact and nuisance for adjacent landowners / users as well as impacting the natural environment.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 2**
Consequence of impact or risk:	**Pollution and nuisance.**
Probability of occurrence:	**3**
Degree to which the impact may cause irreplaceable loss of resources:	**1-Resource will not be lost (R)**
Degree to which the impact can be reversed:	**Reversible**
Indirect impacts:	**Impacts on ecological functioning of river. Impacts on fauna.**
Cumulative impact prior to mitigation:	**• Dumping;** **• Windblown litter causing nuisance;** **• Pollution / degradation of the natural environment.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**18 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**1**
Proposed mitigation:	**• All waste generated on site shall be collected and disposed of at a registered landfill facility;** **• All safe disposal certificates and waste manifests from service providers to be kept and maintained;** **• All staff to receive training on correct waste management practices.**
Residual impacts:	**None**
Cumulative impact post mitigation:	**None**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Waste Impacts**
Nature of impact:	**Improved waste collection and service provision.**

Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 5 (Will not cease)**
Consequence of impact or risk:	**NA – Positive**
Probability of occurrence:	**5 – Definite**
Degree to which the impact may cause irreplaceable loss of resources:	**NA – Positive**
Degree to which the impact can be reversed:	**NA – Positive**
Indirect impacts:	**NA – Positive**
Cumulative impact prior to mitigation:	**NA – Positive**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
Degree to which the impact can be avoided:	**NA – Positive**
Degree to which the impact can be managed:	**NA – Positive**
Degree to which the impact can be mitigated:	**NA – Positive**
Proposed mitigation:	**NA – Positive**
Residual impacts:	**NA – Positive**
Cumulative impact post mitigation:	**NA – Positive**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.**

SERVICES PROVISION

Alternative 1:	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Services provision**
Nature of impact:	**NA**
OPERATIONAL PHASE	
Potential impact and risk:	**Services Provision**
Nature of impact:	**Improved road surface and pedestrian access. Safer road travel. Access to services.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 5 (Will not cease)**
Consequence of impact or risk:	**NA – Positive**
Probability of occurrence:	**5 – Definite**
Degree to which the impact may cause irreplaceable loss of resources:	**NA – Positive**
Degree to which the impact can be reversed:	**NA – Positive**
Indirect impacts:	**NA – Positive**
Cumulative impact prior to mitigation:	**NA – Positive**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
Degree to which the impact can be avoided:	**NA – Positive**
Degree to which the impact can be managed:	**NA – Positive**
Degree to which the impact can be mitigated:	**NA – Positive**
Proposed mitigation:	**NA – Positive**
Residual impacts:	**NA – Positive**
Cumulative impact post mitigation:	**NA – Positive**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.**

NOISE

Alternative 1:	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Noise due to construction machinery**
Nature of impact:	**Noise due to construction machinery during the construction/development phase. Construction machinery may cause noise disturbance to the directly adjacent land users/ owners. It is not anticipated that the noise will be considerable and will only be temporary. Noise due to construction activities is unlikely to cause a nuisance to adjacent residential areas.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Nuisance**
Probability of occurrence:	**1 (Very improbable (VP))**
Degree to which the impact may cause irreplaceable loss of resources:	**1-Resource will not be lost (R)**
Degree to which the impact can be reversed:	**Completely reversible (R) - This will not be a long-term impact nor will it have an impact on the natural processes. It is thus 100% reversible.**
Indirect impacts:	**Nuisance**
Cumulative impact prior to mitigation:	**Nuisance**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**9 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**1- Completely mitigatable (CM)**
Proposed mitigation:	**Machinery and vehicles should be regularly maintained to prevent excessive noise. All machinery and work activities must adhere to the requirements of the noise regulations.**
Residual impacts:	**Nuisance**
Cumulative impact post mitigation:	**Nuisance**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**7 - Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Not applicable to operational phase.**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.**

IMPACT TABLES-NO-GO

GEOGRAPHICAL AND PHYSICAL

SOIL EROSION AND DUST

Alternative 1:	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Not applicable**
OPERATIONAL PHASE	
Potential impact and risk:	**Soil erosion**
Nature of impact:	**Informal roads and river crossing prone to erosion.**
Extent and duration of impact:	**Extent 2 & Duration 3 (5 – 15 years)**
Consequence of impact or risk:	**Degradation of ESA. Possible pollution of surface and ground water.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**2-Resource may be partly destroyed (PR)**
Degree to which the impact can be reversed:	**Partly reversible (PR)**
Indirect impacts:	**Pollution of water resources. Degradation of ESA.**
Cumulative impact prior to mitigation:	**Erosion and impact on watercourse.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**44-Medium**
Degree to which the impact can be avoided:	**Low**
Degree to which the impact can be managed:	**Low**
Degree to which the impact can be mitigated:	**3**
Proposed mitigation:	**NA**
Residual impacts:	**Soil erosion.**
Cumulative impact post mitigation:	**Soil erosion.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**44 – Medium**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Not applicable**

SURFACE AND GROUND WATER POLLUTION

Alternative 1:	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Not applicable**
OPERATIONAL PHASE	
Potential impact and risk:	**Surface and ground water pollution**
Nature of impact:	**Lack of access to services can result in water pollution due to limited waste and sanitation services.**
Extent and duration of impact:	**Extent 2 & Duration 3 (5 – 15 years)**
Consequence of impact or risk:	**Degradation of ESA. Possible pollution of surface and ground water.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**2-Resource may be partly destroyed (PR)**
Degree to which the impact can be reversed:	**Partly reversible (PR)**
Indirect impacts:	**Pollution of water resources. Degradation of ESA.**
Cumulative impact prior to mitigation:	**Erosion and impact on watercourse.**

Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**44-Medium**
Degree to which the impact can be avoided:	**Low**
Degree to which the impact can be managed:	**Low**
Degree to which the impact can be mitigated:	**3**
Proposed mitigation:	**NA**
Residual impacts:	**Pollution.**
Cumulative impact post mitigation:	**Pollution.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**44 – Medium**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Not applicable**

ECOLOGICAL AND BIOLOGICAL

IMPACT ON SENSITIVE ENVIRONMENTS (RIVER)

Alternative 1:	**Biological Aspect Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Not applicable.**
OPERATIONAL PHASE	
Potential impact and risk:	**Vehicles and pedestrians using the informal road to cross the river results in degradation of the river.**
Extent and duration of impact:	**Extent 2 & Duration 3 (5 – 15 years)**
Consequence of impact or risk:	**Degradation of ESA.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**2-Resource may be partly destroyed (PR)**
Degree to which the impact can be reversed:	**Partly reversible (PR)**
Indirect impacts:	**Pollution of water resources. Soil erosion. Degradation of ESA.**
Cumulative impact prior to mitigation:	**Erosion and impact on watercourse.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**44-Medium**
Degree to which the impact can be avoided:	**Low**
Degree to which the impact can be managed:	**Low**
Degree to which the impact can be mitigated:	**3**
Proposed mitigation:	**NA**
Residual impacts:	**Changes to hydrology and flow.**
Cumulative impact post mitigation:	**Changes to hydrology and flow.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**44 – Medium**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Not applicable**

TRAFFIC IMPACTS

Alternative 1:	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Not applicable.**
OPERATIONAL PHASE	
Potential impact and risk:	**Traffic Impacts**
Nature of impact:	**Poor road surface and pedestrian access. Unsafe road travel. Water passing through the river could result in potential drownings when people are crossing the river in flood events.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 5 (Will not cease)**
Consequence of impact or risk:	**Local residents will not have proper access to the site.**
Probability of occurrence:	**4**
Degree to which the impact may cause irreplaceable loss of resources:	**1-Resource will not be lost (R)**
Degree to which the impact can be reversed:	**Partly reversible (PR)**
Indirect impacts:	**Impact on pedestrians, road users and watercourse in the event of a major storm event.**
Cumulative impact prior to mitigation:	**Traffic impacts**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**52 – Medium**
Degree to which the impact can be avoided:	**Low**
Degree to which the impact can be managed:	**Low**
Degree to which the impact can be mitigated:	**3**
Proposed mitigation:	**NA**
Residual impacts:	**Traffic and potential harm to humans.**
Cumulative impact post mitigation:	**Traffic impacts.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**52 – Medium**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Not applicable**

NOISE

Alternative 1:	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Not applicable.**
OPERATIONAL PHASE	
Potential impact and risk:	**Not applicable.**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Not applicable.**